

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

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No. 8

A. A. COMMON, LL.D., F.R.S., President, in the Chair.

William Banks, 30 Corporation Street, Bolton, Lancashire ;
and

Alfred Ernest Young, Assoc. M. Inst. C.E., Trigonometrical
Survey of Perak, Taiping, Perak, Straits Settlements,

were balloted for and duly elected Fellows of the Society.

The following candidates were proposed for election as Fellows of the Society, the names of the proposers from personal knowledge being appended :—

Lewis Evans, J.P., F.S.A., Barnes Lodge, King's Langley,
Herts (proposed by Sidney Waters) ;

John Anderton Greenwood, Solicitor, LL.M., B.A.,
Brooklyn, Earl's Court Square, S.W. (proposed by Capt.
D. Forbes).

Seventy-six presents were announced as having been received since the last meeting, including, amongst others :—

W. T. Lynn, Remarkable Eclipses ; T. K. Mellor, A Handy Map of the Moon ; F. Tisserand, *Traité de Mécanique céleste*, tome iv., presented by the authors ; three photographs of Comet Rordame-Quénisset, presented by the Lick Observatory.

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Some Notes on the Use and Adjustment of the Cœlostat. By
H. H. Turner, M.A., B.Sc., Savilian Professor.

The name "cœlostat" was suggested by Mons. G. Lippmann (*C.R.* cxx. No. 19) for that form of heliostat in which the mirror rotates round an axis in its plane, and parallel to the Earth's axis, once in two days. A telescope fixed to the Earth and pointed to such a mirror will always see the same stars, as though they were attached rigidly to the Earth. The instrument seems specially suitable for eclipse work, and three such will be sent out in the forthcoming eclipse expeditions to Japan and Norway, organised by the Joint Permanent Eclipse Committee of the Royal and Royal Astronomical Societies. One of these has been tried at Oxford during the last few months, and the following notes on its adjustments &c. may be found useful by others working with the instrument.

SUPPORT FOR CŒLOSTAT.

This should be as firm as possible—stone or brick, with concrete foundation, if there is time and opportunity. No precautions to ensure steadiness are to be looked upon as unnecessary. It is a great comfort to feel that the adjustments, once made, are permanent. But, in case nothing better is available, a very good support can be made of the wooden box for the instrument, (especially if it be filled with sand, or sand and stones), placed on the soil. A cœlostat was mounted on its box, without any filling of sand, at Oxford; the box resting on two planks scraped into the ground and levelled. The adjustments had only altered by a few minutes of arc in a fortnight, probably through the yielding of the wood at the points of greatest pressure from the weight of the instrument.

When placed on the box, the height of the centre of the mirror is 3 feet 6 inches, and the instrument is suited for work with a horizontal telescope. But if the telescope is to point downwards, as will probably be found most convenient in general (see below "*Position of Telescope*"), the box will be unnecessary, and a flat stone or a flat board will be all that is required. Perhaps the iron base might rest on the bare earth if sufficiently firm.

SUPPORT FOR TELESCOPE.

No means of securing steadiness are thrown away, but even rougher methods may do here. No permanence of adjustment is required—just the contrary, for the telescope must be shifted to follow the Sun in declination. But when once pointed on the Sun, there should be some method of clamping it tightly, so that the putting in and out of the plate and the opening of the exposing shutter, &c., may not shake it. But it will readily be seen that even the flimsiest method of holding the telescope in this way is superior to that of the ordinary equatorial.